

AUTOMATED ACCOUNTING SYSTEM FOR MFP DEVICES

Background of the Invention

This invention is directed to a system and method for automated accounting of document generating device usage. More particularly, this invention is directed to a system and method for periodically receiving usage data of a document generating device or multifunctional peripheral.

In order to reduce operational costs, small businesses will outsource copying, printing, scanning, and facsimile services to printing businesses or similar types of establishments. Further, corporations will typically share document generating devices or multifunctional peripherals among different departments. Document generating devices or multifunctional peripherals are therefore equipped with accounting features and systems to report different customer or department usage information. Such systems typically consist of an accounting database and a set of counters as known in the art associated with each account. Any operation performed on the document generating device or multifunctional peripheral, such as copying, printing, or scanning, is charged under a different account increasing the counter associated with the account by one.

Accounting administrators may obtain reports of usage per account. Currently, the accounting administrator must obtain the information directly from the document generating device in order for the customer or department to be billed. The accounting administrator must physically access the document generating device on a regular basis to obtain the usage data needed to properly bill the customer or department.

It is desirable to have a system and method for automated accounting of document generating device usage.

Summary of the Invention

In accordance with the present invention, there is provided a system and method for automated accounting of document generating device usage.

Further, in accordance with the present invention, there is provided a system and method with a configurable accounting agent adapted to automatically generate usage reports of the document generating device and transmit the reports to one or more destinations.

Still further, in accordance with the present invention, there is provided a system for automated accounting of document generating device usage comprising means adapted for acquiring usage data representative of usage of a document generating device in accordance with a selected one of a plurality of user accounts and means adapted for storing report data representative of a data reporting period. The system also comprises reporting means adapted for periodically outputting the usage data to an associated accounting administrator in accordance with the report data.

In a preferred embodiment, the output or reports are transmitted to at least one destinations, such as electronic mail server, a document management system, an image generating device, and an Internet server. In a preferred embodiment, the system includes means adapted for selecting the parameters for outputting or reporting the usage data.

Still further, in accordance with the present invention, there is provided a method for automated accounting of document generating device usage comprising the steps of acquiring usage data representative of usage of a document generating device in accordance with a selected one of a plurality of user accounts and storing report data representative of a data reporting period. The method also comprises the step of periodically outputting the usage data to an associated accounting administrator in accordance with the report data.

In a preferred embodiment, the output or reports are transmitted to at least one destinations, such as electronic mail server, a document management system, an image generating device, and an Internet server. In a preferred embodiment, the method also comprises selecting the parameters for outputting or reporting the usage data.

These and other advantages, aspects, and features will be understood by one of ordinary skill in the art upon reading and understanding the specification.

Brief Description of the Drawings

Figure 1 is a block diagram of the system according to the present invention.

Figure 2 is a flow chart illustrating the method according to the present invention.

Figure 3 is a sample template for selecting the parameters for outputting or reporting the usage data.

Detailed Description of the Preferred Embodiment

The present invention is directed to a system and method for automated accounting of document reading device usage. The system and method include a configurable accounting agent adapted to automatically generate usage reports of the document generating device and transmit the reports to one or more destinations.

Figure 1 shows a block diagram preferred embodiment of the system according to the present invention generally designated as 100. The system comprises at least one document reading device, as illustrated by device 102, such as a scanner or copier, for generating image data. The document reading device is any suitable document reading device known in the art. Preferably, the document reading device is a scanning device, a copying device, a facsimile device, a printing device, or a multifunctional peripheral. More preferably, the document reading device is a scanning device. Suitable commercially available document reading devices include, but are not limited to, the Toshiba e-Studio Series Controller.

The document reading device further comprises a controller 104 which controls the functions of the document reading device. The controller comprises an accounting agent 106 that collects selected accounting information for a plurality of user accounts via any suitable means. Preferably, the accounting agent collects the accounting information via a set of counters as known in the art. The controller also comprises an accounting storage medium 108 for storing selected accounting data for a plurality of user accounts. The controller further comprises means adapted to select the parameters for outputting or reporting usage data or setting agent 110, such as a graphical user interface or display.

A Transfer Agent 112 is used to access the accounting or usage data on the controller. An data transfer session is initiated on the communication link 114 whereupon the usage data is transferred to the transfer agent via a data transfer system. The communication link is comprised of one or more segments of wired or wireless communications.

Figure 2 illustrates a flow chart 200 for automating accounting of usage data according to the present invention. At 202, an accounting administrator or other administrative user would select the parameters for reporting the accounting usage via any suitable means. In a preferred

embodiment, access to the system to select the parameters is restricted to certain users who provide the appropriate information, such as username and password, to gain access to the setting agent. The accounting administrator suitably accesses the setting agent via any suitable means, such as remotely via a suitable communications link or by physically accessing the setting agent on the document reading device.

Figure 3 is shows a sample template 300 for selecting the parameters for reporting usage data. The accounting administrator provides the date and time that the usage data are to be retrieved or reported at 302. The accounting administrator enters the time interval at which future usage data are to be retrieved or reported at 304. At 306, the accounting administrator enters the destination to which the usage data is to be sent. The accounting administrator may also suitably enter any specific information for the destination. Preferably, the usage data are routed via electronic mail transmission, facsimile transmission, FTP transmission, and HTML transmission. Preferably, the usage data are routed to the following types of destinations: electronic mail server, a document management system, an image generating device, and an Internet server. In one embodiment, the usage data are suitably sent to a plurality of destinations.

At 308, the accounting administrator checks if the counter means are to be reset after reporting the usage data. At 310, the accounting administrator enters information regarding which usage data are to be collected, such as the user accounts to be reported. Any suitable filters or restrictions are suitably entered to restrict the usage data to that desired. At 312, the accounting administrator specifies the file format for the usage data, such as a CSV file or an Excel spreadsheet. The accounting administrator selects Ok 314 to select the parameters and Cancel 316 to cancel the settings.

At 204, the document generating device generates image data in its normal course. At 206, a determination is made whether to report the usage data to the accounting administrator. The document generating device determines if the predefined time interval as specified by the accounting administrator has passed via any suitable means. If the predefined time interval has not passed, the document generating device does not start the process to report the usage data, and flow returns to 204. If the predefined time interval has passed, flow proceeds to 208 wherein the accounting agent collects the usage data in accordance with the parameters selected by the accounting administrator via any suitable means. The accounting agent only collects the usage

data as specified by any filters or restrictions specified by the accounting administrator. At 210, any account counters selected to reset by the accounting administrator are reset.

At 212, the accounting agent formats the usage data into a the specified file format as set by the accounting administrator. At 214, the Transfer Agent transfers the usage data to the specified destination or destinations as set by the accounting administrator.

While in the preferred embodiment the present invention is implemented in software, as those skilled in the art can readily appreciate it may also be implemented in hardware or a combination of software and hardware.

Although the preferred embodiment has been described in detail, it should be understood that various changes, substitutions, and alterations can be made therein without departing from the spirit and scope of the invention as defined by the appended claims. It will be appreciated that various changes in the details, materials and arrangements of parts, which have been herein described and illustrated in order to explain the nature of the invention, may be made by those skilled in the area within the principle and scope of the invention as will be expressed in the appended claims.